

Agilent Ref: 10010116-1
United States Application Serial No. 10/632,600

REMARKS

In view of the following remarks, the Examiner is requested to withdraw the rejections and allow Claims 1-39, the only claims pending and currently under examination in this application.

FORMAL MATTERS

Claims 1-13, 30-36 and 39 have been rejected.

Claim 1 has been amended to specify a method of removing laser debris from a laser-scribed substrate surface wherein the method comprises ultrasonically or sonically agitating a particulate-comprising fluid while in contact with said surface to remove laser debris from said laser-scribed substrate surface. Support may be found throughout the specification, for example at para. [0044] and para. [00104].

Claims 14-29 and 37-38 have been withdrawn.

As the above amendments enter no new matter to the application, their entry is respectfully requested.

Rejection under 35 U.S.C. § 112, Second Paragraph

Claims 1-13, 30-36 and 39 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. In view of the above amendments, this rejection may be withdrawn.

Rejection under 35 U.S.C. § 102

Claims 1-6, 9-11 and 39 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Yoshida (U.S. Patent No. 6,221,118).

According to MPEP § 2131, a claim is anticipated by a reference only if the *reference teaches each and every element of the claim.*

As amended, Claim 1 specifies a method for removing laser debris from a laser-scribed substrate surface by ultrasonically or sonically agitating the

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particulate-comprising fluid while in contact with said surface to remove laser debris. As such, the particulate-comprising fluid is first contacted with the substrate surface and then ultrasonically or sonically agitated to remove the laser debris.

In contrast, Yoshida teaches a method for polishing a substrate surface using a cerium oxide abrasive. According to the disclosure, the cerium oxide abrasive is used for "smoothing" inorganic insulating film layers (col. 1, line 11).

However smoothing is not the equivalent of removing laser debris from a laser-scribed substrate surface. Further, nowhere in the specification does Yoshida disclose a method of removing laser debris from a laser-scribed substrate surface as in the present invention.

In making the rejection, the Examiner refers to the following passage of Yoshida:

These cerium oxide particles may be dispersed in water by dispersion treatment using a conventional agitator, and besides by using a homogenizer, an ultrasonic dispersion machine or a ball mill (col. 3, lines 17-27).

It appears that the Examiner is equating Yoshida's ultrasonic dispersion machine with the element of the present invention in which a particulate-comprising fluid is ultrasonically or sonically agitated while in contact with a laser-scribed substrate surface.

However, Yoshida is merely describing a method of making the slurry-composition to be added to the substrate. In other words, the cerium oxide slurry is created by dispersion-treating an aqueous solution. As such, Yoshida first produces the slurry by ultrasonic dispersion and then adds the slurry to the substrate surface.

Therefore, in Yoshida the slurry is not contacted with the substrate while being ultrasonically or sonically agitated.

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Therefore, Yoshida et al. fails to teach each and every element of the present invention. As such, the rejection of Claims 1-6, 9-11 and 39 under 35 U.S.C. § 102(b) may be withdrawn.

Rejection under 35 U.S.C. § 103

In the Office Action, Claim 7 has been rejected under 35 U.S.C. § 103(a) as being obvious over Yoshida (U.S. Patent No. 6,221,118) in view of Dalton et al. (U.S. Patent No. 4,328,047).

With respect to rejections made under 35 U.S.C. § 103, MPEP § 2142 states:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. **Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir.1991). [emphasis added]

As set forth above, Yoshida fails to anticipate the present invention because the reference fails to teach 1) a method of removing laser debris from a laser-scribed substrate surface and 2) ultrasonically or sonically agitating the particulate-comprising fluid while in contact with said surface to remove laser debris.

As Dalton was cited for teaching the frequency of 80 kHz, the reference fails to make up for the deficiency of Yoshida. Accordingly, this rejection may be withdrawn.

Claim 8 has been rejected under 35 U.S.C. § 103(a) as being obvious over Yoshida (U.S. Patent No. 6,221,118) in view of Rupe et al. (U.S. Patent No.

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4,116,851).

As set forth above, Yoshida fails to anticipate the present invention because the reference fails to teach 1) a method of removing laser debris from a laser-scribed substrate surface and 2) ultrasonically or sonically agitating the particulate-comprising fluid while in contact with said surface to remove laser debris.

As Rupe was cited for teaching particulates having the same specific gravity as the fluid, the reference fails to make up for the deficiency of Yoshida. Accordingly, this rejection may be withdrawn.

In the Office Action, Claims 1-6, 9-13 and 30-36 have been rejected under 35 U.S.C. § 103(a) as being obvious over Miller (U.S. Patent No. 5,418,136) in view of Yoshida (U.S. Patent No. 6,221,118).

Miller discloses a method for producing an array by laser-scribing the substrate. However, as acknowledged by the Examiner in the Office Action, Miller fails to disclose the manner in which the substrate surface is modified.

As such, the Examiner is relying on Yoshida to make up for the deficiency of Miller. Specifically, the Examiner is relying on Yoshida to provide the elements of removing laser debris from a laser-scribed substrate surface by ultrasonically or sonically agitating a particulate-comprising fluid while in contact with the substrate surface.

As discussed above, Yoshida fails to teach or suggest 1) a method of removing laser debris from a laser-scribed substrate surface and 2) ultrasonically or sonically agitating the particulate-comprising fluid while in contact with said surface to remove laser debris. As such, Yoshida fails to make up for the deficiency of Miller. Accordingly, this rejection may be withdrawn.

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Claim 7 has been rejected under 35 U.S.C. § 103(a) as being obvious over Yoshida (U.S. Patent No. 6,221,118) in view of Miller (U.S. Patent No. 5,418,136) as applied to Claim 1 above, and further in view of Dalton et al. (U.S. Patent No. 4,328,047).

As set forth above, the combined teachings of Miller and Yoshida fail to teach or suggest the elements of ultrasonically or sonically agitating a particulate-comprising fluid while in contact with the laser-scribed substrate to remove laser debris. As Dalton was cited for teaching the frequency of 80 kHz, the reference fails to make up for the deficiency of Miller and Yoshida. Accordingly, this rejection may be withdrawn.

Claim 8 has been rejected under 35 U.S.C. § 103(a) as being obvious over Yoshida (U.S. Patent No. 6,221,118) in view of Miller (U.S. Patent No. 5,418,136) as applied to Claim 1 above, and further in view of Rupe et al. (U.S. Patent No. 4,116,851).

As set forth above, the combined teachings of Miller and Yoshida fail to teach or suggest the elements of ultrasonically or sonically agitating a particulate-comprising fluid while in contact with the laser-scribed substrate to remove laser debris. As Rupe was cited for teaching particulates having the same specific gravity as the fluid, the reference fails to make up for the deficiency of Miller and Yoshida. Accordingly, this rejection may be withdrawn.

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Conclusion

The Applicants submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone John Brady at 408- 553-3584.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-1078.

Respectfully submitted,

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